

## CLAIMS

1. An apparatus for testing a packaged integrated circuit of the type incorporating a radiation sensing element comprising: a load board provided with electrical circuitry for interfacing with the packaged integrated circuit to be tested; a test socket, said test socket being mounted on said load board and being adapted to provide electrical connections between said packaged integrated circuit and said load board; a plunger for retaining said packaged integrated circuit within said test socket; and a radiation source mounted on said load board adjacent to said test socket wherein a radiation pathway is provided in said plunger, said pathway directing radiation emitted by said radiation source through said plunger to the radiation sensing element of said packaged integrated circuit.  
5
2. An apparatus as claimed in claim 1 wherein the radiation pathway is a generally U-shaped pathway through the plunger.
- 15 3. An apparatus as claimed in claim 1 or claim 2 wherein a first end of the pathway is adjacent to the radiation source and a second end of the pathway is adjacent to the sensing element of the packaged integrated circuit when the plunger is used to retain the packaged integrated circuit within the test socket.
- 20 4. An apparatus as claimed in any preceding claim wherein said pathway is adapted for directing radiation from one end to its other end by the provision of radiation directing means.

- 11 -

5. An apparatus as claimed in claim 4 wherein the radiation directing means comprises two or more prisms mounted within the pathway.
6. An apparatus as claimed in claim 4 wherein the radiation directing means comprises a bundle of collimated optical fibres mounted within the pathway.
- 5 7. An apparatus as claimed in any preceding claim wherein the radiation source is operative to emit a radiation pattern which is directed to the radiation sensing element of the packaged integrated circuit via the pathway.
8. An apparatus as claimed in claim 7 wherein the radiation pattern comprises spatial and/or temporal variations in the intensity and/or frequency of 10 radiation emitted by the radiation source.
9. An apparatus as claimed in claim 7 or claim 8 wherein the spatial position of the radiation pattern on the light source can be varied to compensate for minor misalignment between the plunger, the radiation source and the packaged integrated circuit.
- 15 10. An apparatus as claimed in any preceding claim wherein the area of the radiation source is equal to or greater than the cross-sectional area of the pathway.
11. An apparatus as claimed in any preceding claim wherein the cross-sectional area of the pathway is greater than or equal to the area of the sensing element 20 of the packaged integrated circuit.

- 12 -

12. An apparatus as claimed in any preceding claim wherein the shape of the radiation source, cross-section of the pathway and the sensing element of the packaged integrated circuit are similar.
13. A method of testing packaged integrated circuits of the type incorporating a radiation sensing element comprising the following steps: inserting said packaged integrated circuit into a test socket, said test socket being mounted on a load board and being adapted to provide electrical connections between said packaged integrated circuit and said load board wherein said load board is provided with electrical circuitry for interfacing with the packaged integrated circuit to be tested; retaining the packaged integrated circuit in the test socket by applying pressure with a plunger; and directing radiation from a radiation source mounted on said load board adjacent to said test socket through a radiation pathway provided in said plunger, thereby exposing the radiation sensing element to a suitable radiation signal emitted by the radiation emitting means.
14. A method as claimed in claim 13 implemented using the apparatus of claims 1 to 13.